

2013

STANDARDS: MASTER'S AND DOCTORAL DEGREE

Standards: Master's and Doctoral Degree document outlines sets of characteristics that describe and represent guidelines on the minimum levels of acceptable practices of master's and doctoral degree by coursework, mixed mode and research which includes industrial doctoral and PhD by published work.



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FOREWORD

In its effort to ensure the quality of programmes in institutions of higher learning in Malaysia, Malaysian Qualifications Agency (MQA) has published various documents such as Malaysian Qualifications Framework (MQF), Code of Practice for Programme Accreditation (COPPA), Code of Practice for Institutional Audit (COPIA), Guidelines to Good Practices (GGP) and Programme Standards (PS). It is important that these quality assurance documents be read together with this document in developing and delivering higher education programmes in Malaysia.

The Standards: Master's and Doctoral Degree document outlines sets of characteristics that describe and represent guidelines on the minimum levels of acceptable practices that cover all the nine Malaysian quality assurance areas: Vision, Mission, Education Goals and Learning Outcomes, Programme Design and Delivery, Assessment of Candidate Learning, Candidate Selection and Support Service, Academic Staff, Educational / Research Resources, Programme Monitoring and Review, Governance, Leadership and Administration and Continual Quality Improvement.

This Standards document has been developed by a panel in consultation with various public and private Higher Education Providers (HEPs), relevant government and statutory agencies, professional bodies, related industry and students.

This standards do not attempt to give specific characteristics for the master's and doctoral degree programmes, especially for those related to the framing of the curricula and provision of educational / research resources. This document encourages diversity and allows programme providers to be innovative and to be able to customise their programmes in order to create their own niches, while ensuring they produce graduates that meet the current needs of the profession and ensuring they fulfil their obligations to society.

Last but not least, I would like to express my appreciation and gratitude to all the panel members for their contributions and co-operative spirit, the various stakeholders who have given their inputs, all the officers from MQA and hosts for the pilot visits namely Asia e University (AeU) Multimedia University (MMU), Universiti Tun Hussein Onn Malaysia (UTHM) and Universiti Teknologi Malaysia (UTM) who have contributed to the development of Standards: Master's and Doctoral Degree document. I should also make a special mention for Deans of Graduate Studies Council (DEGS) who developed the initial draft of this document.

Thank you.

Dato' Dr. Syed Ahmad Hussein

Chief Executive Officer

Malaysian Qualifications Agency (MQA)

2013

GLOSSARY

1. **Academic staff** refers to higher education provider (HEP) personnel who are involved in teaching and research supervision (including research fellows).
2. **Administrative staff** refers to HEP personnel who are involved in managing the programmes.
3. **Alumni** refer to graduates of the programme.
4. **Candidate** refers to fulltime or part time candidate undertaking postgraduate programme by coursework / mixed mode / research. If the candidate is a staff member, he / she is not holding an administration post.
5. **Collaborator** refers to an external entity involved in the programme and / or with the candidates.
6. **Coordinator** is the person whose responsibility is to provide guidance for different groups to work together in an organised way to achieve a particular goal.
7. **Coursework** refers to work assigned to and done by a candidate within a given period, which is assessed as an integral part of the programme.
8. **Coursework programme** refers to postgraduate programmes with a research component of less than 50 percent.
9. **Department** refers to the area of the HEP with academic responsibility. Examples are a college, faculty, school, institute, department, centre and unit.
10. **Dissertation** refers to the documentation of the original research prepared and submitted by the candidate for the award of the degree for the master's programme by research, and mixed mode.

11. **Dissertation / Thesis Examination Committee** should include at least a chairperson and examiner(s).
12. **Doctoral degree by research** refers to a doctoral degree programme where candidates are required to contribute to original research in a research environment.
13. **External examiner** refers to qualified person(s) who evaluate / s the dissertation / thesis. The external examiner is appointed by the HEP, but is not affiliated with the HEP. It may be requested that the external examiner is part of the Dissertation / Thesis Examination Committee.
14. **External stakeholders** refer to external parties who have indirect interest in the programme. Examples are alumni, industries, parents, collaborators, fund providers and professional associations.
15. **Formal consultation** refers to meetings or discussions that are recorded in log books, or in emails, and which have attendance list and minutes.
16. **Fund provider** refers to financial contributors to the programme and / or candidates.
17. **Industrial doctoral degree** refers to a doctoral degree programme where candidates are required to spend most of their time carrying out the research at their respective organisations or industries.
18. **Industrial supervisor** refers to someone from the industry who has substantial experience or expertise in the relevant areas of the research topic who is appointed to supervise candidates for industrial doctoral programme.
19. **Informal consultation** refers to meetings or discussions that are not recorded, for example, telephone discussions and / or telephone meetings.

20. **Internal examiner** refers to qualified person(s) who evaluate / s the dissertation / thesis. The internal examiner is appointed by the HEP, and is affiliated with the HEP.
21. **Internal stakeholder** refers to internal parties who have direct interest in the programme. Examples are HEP management, supervisors and candidates.
22. **Law and regulation** refers to legal and diplomatic matters that govern the conduct of candidates in the programme.
23. **Longitudinal study** refers to a correlational research study that involves repeated observations of the same variables over long periods of time often over many decades.
24. **Mixed mode programme** refers to postgraduate programmes with at least a 50 percent research component.
25. **Networking and collaboration** refers to MOAs, MOUs, LOCs and LOIs signed between the collaborating parties.
26. **Principal author** refers to the author that made the most substantive contribution to the final manuscript as submitted.
27. **Programme Advisory Panel** refers to individuals invited by the HEP to provide feedback on the programme.
28. **Programme** refers to master's or doctoral degree by coursework / mixed mode / research.
29. **Programme structure** refers to the design and form of the coursework / mixed mode / research programmes.
30. **Programme team** refers to the coordinator and the faculty postgraduate committee.

31. **Progress report** refers to the periodic submission to the department of a report regarding a candidate's progress.
32. **Quality unit** refers to an entity in the HEP that advises and manages the quality of the programme and compliance with standards.
33. **Research project** refers to the documentation of the research component prepared and submitted by the candidate for the award of the programme by coursework.
34. **Supervisor(s)** refers to a person(s) or the committee that provide / s supervision for the research conducted by the candidates. They can be categorised as supervisor, co-supervisor, field supervisor, and panel of supervisors of research candidates.
35. **Support staff** refers to HEP personnel who are involved in providing assistance to the programme. Examples are laboratory technicians, librarians, ICT personnel and equipment technicians.
36. **Thesis** refers to the documentation of the original research prepared and submitted by the candidate for the award of the degree for the doctoral programme by research, and mixed mode.
37. **Viva voce** refers to oral defense of the dissertation / thesis for the programme.

ABBREVIATION

- | | | |
|----|-----|--|
| 1. | HEP | Higher Education Provider |
| 2. | ICT | Information and Communication Technology |
| 3. | MOA | Memorandum of Agreement |
| 4. | MOU | Memorandum of Understanding |
| 5. | MQF | Malaysian Qualifications Framework |
| 6. | LOC | Letter of Collaboration |
| 7. | LOI | Letter of Intent |
| 8. | PhD | Philosophiae Doctor (Doctor of Philosophy) |
| 9. | PO | Programme Objective |

**STANDARDS: MASTER'S AND
DOCTORAL DEGREE
BY RESEARCH**

AREA 1: VISION, MISSION, EDUCATION GOALS AND LEARNING OUTCOMES

The vision, mission, educational goals and learning outcomes of the higher education provider (HEP) guide its research planning and implementation, and bring together its members to produce graduates of excellence. The general goal is to develop broadly-trained graduates through the:

- development of knowledge, research and communication skills and competency based on the scientific / enquiry process and its outcomes;
- enhancement of generic skills such as attitudes, ethics, sense of professionalism and leadership skills for societal advancement within the framework of the national vision;
- utilisation of analytical and problem solving skills in order to evaluate and make decisions critically and creatively based on research evidence and / or experience;
- enhancement of the quest for knowledge and lifelong learning skills in line with the advancement of global development;
- research outcomes that are relevant to the national and international context; and
- dissemination of research outcomes through publications.

Research programmes are the building blocks that support the larger vision and mission of the HEP. Hence, these larger institutional goals must be considered in the design of research programmes.

The quality of the research programmes is ultimately determined by the capability of its researchers to carry out their expected roles and responsibilities in national and international developments.

STANDARDS FOR AREA 1

1.1 Statement of Programme Aims, Objectives and Learning Outcomes

A programme's stated aims, objectives and learning outcomes guide what it wants the candidates to achieve. It is crucial for these aims, objectives and learning outcomes to be expressed explicitly and to be made known to the candidates as well as to the internal and external stakeholders.

1.1.1 Basic Standards

- i. The programme must define its aims, objectives and learning outcomes and identify its internal and external stakeholders.
- ii. The department must consult and discuss with relevant internal and external stakeholders when formulating programme aims and objectives.
- iii. The programme objectives must reflect the key elements of the outcomes of higher education that are in line with national and international practices.
- iv. The programme aims, objectives and learning outcomes must be consistent with and supportive of the HEP's vision and mission.
- v. The programme aims, objectives and learning outcomes must encompass provision for training or support to enable research candidates to acquire skills in problem identification, analytical problem solving and publication of research outcomes.
- vi. The aims, objectives and learning outcomes of the master's programme must encompass research and research training skills in addressing problems of concern.
- vii. The aims, objectives and learning outcomes of the doctoral programme must encompass knowledge creation, novelty and innovation.

1.1.2 Enhanced Standards

- i. The internal and external stakeholders should include national and international researchers.

- ii. The programme's aims, objectives and learning outcomes should be periodically reviewed in consultation with internal and external stakeholders, including international peers.

1.2. Learning Outcomes

The quality of the research programme is ultimately assessed by the capability of the candidates to carry out their expected roles and responsibilities in society. This requires the programme to have clear statements of the learning outcomes to be achieved. These statements should cumulatively reflect the 7 MQF domains of learning outcomes: Knowledge of Discipline Areas; Practical Skills; Social Skills and Responsibilities; Values, Attitudes and Professionalism; Communication, Leadership and Team Skills; Problem Solving and Scientific Skills; and Information Management and Lifelong Learning Skills.

1.2.1 Basic Standards

- i. The scope of learning outcomes must reflect the competencies that the candidates should have upon completion of the programme:

Master's Degree by Research

At the end of the programme, graduates must be able to:

- 1) demonstrate mastery of knowledge in the relevant field;
- 2) apply practical skills in the relevant field;
- 3) relate ideas to societal issues in the relevant field;
- 4) conduct research with minimal supervision and adhere to legal, ethical and professional codes of practice;
- 5) demonstrate leadership qualities through communicating and working effectively with peers and stakeholders;
- 6) generate solutions to problems using scientific and critical thinking skills;
and
- 7) manage information for lifelong learning.

Doctoral Degree by Research

At the end of the programme, graduates must be able to:

- 1) synthesise knowledge and contribute to original research that broadens the frontier of knowledge in the relevant field;
- 2) adapt practical skills leading to innovative ideas in the relevant field;
- 3) provide expert advice to society in the relevant field;
- 4) conduct research independently and adhere to legal, ethical and professional codes of practice;
- 5) display leadership qualities through communicating and working effectively with peers and stakeholders;
- 6) appraise problems in the relevant field critically using scientific skills; and
- 7) integrate information for lifelong learning.

Note: For the industrial doctoral programme, 'in the relevant field' should be read as 'in the relevant industry.'

- ii. The programme must demonstrate how the defined research components contribute to the fulfillment of the programme's learning outcomes.
- iii. The attainment of the learning outcomes must be continuously assessed throughout the programme.

1.2.2 Enhanced Standards

- i. At the end of the programme, graduates should be able to publish in peer reviewed publications.
- ii. The programme should specify the link between research competencies expected on completion of studies and those required for career enhancement and future research.

AREA 2: PROGRAMME DESIGN AND DELIVERY

For the purpose of these standards in the accreditation of programmes offered by HEPs, the term “Programme” refers to research that is structured for a specified duration of time and volume of learning. This is required to attain the stated learning outcomes for the award of a master’s or doctoral degree by research.

STANDARDS FOR AREA 2

2.1 Academic Autonomy

An academic institution is expected to have sufficient autonomy over academic matters. Such autonomy should be reflected at the departmental level where the programme is being offered.

Recommended nomenclature of postgraduate degrees awarded is as shown in Table 1.

Table 1: Nomenclature of Postgraduate Degrees Awarded

Qualification	Mode		
	Research	Mixed Mode	Coursework
Master’s	MPhil	MPhil	Master’s degree according to field of specialisation
Doctorate	PhD or Professional Doctorate	PhD	Doctoral degree according to field of specialisation e.g. DBA, DEd, DEng
Post Doctorate	DSc, DEngSc	Not applicable	Not applicable

2.1.1 Basic Standards

- i. The department must have sufficient autonomy to design the programme structure and to allocate the resources necessary for its implementation, so as to ensure the attainment of the learning outcomes. Where applicable, the provision must also cover programmes conducted on campuses that are geographically separated.
- ii. The academic staff must be given sufficient autonomy to focus on areas of his / her expertise, such as academic supervision of candidates, research and writing, scholarly activities, academically-related administrative duties, and community engagement.
- iii. The HEP must have clearly-stated rules and regulations on conflict of interest, particularly in the areas of appointment of supervisors and examiners, to ensure that candidates' best interests are addressed.
- iv. The HEP must have clearly-stated policies on intellectual property.

2.1.2 Enhanced Standards

- i. The HEP should have clearly-stated policies on conflict of interest, such as in the areas of private practice, part time employment and consultancy services.
- ii. The HEP should have a policy on academic autonomy for the department and the academic staff, reflecting the intellectual maturity of the HEP.
- iii. The HEP should have clearly-stated policies on indemnity insurance.

2.2 Programme Design and Supervision

2.2.1 Basic Standards

- i. The department must have a defined process by which the programme structure is established, reviewed and evaluated with the involvement of the academic staff and stakeholders.
- ii. The programme must be considered after the resources and / or access to resources to support the programme have been identified.

- iii. The programme structure and supervision must support the attainment of the programme learning outcomes.
- iv. There must be a variety of academic activities to attain the learning outcomes and to ensure that candidates take responsibility for their own learning.

2.2.2 Enhanced Standards

- i. The programme structure should encourage multi-disciplinary approaches through a variety of activities to enhance the personal and professional development of the candidate.
- ii. The needs analysis for the programme should involve feedback from external sources including stakeholders, whose comments should be considered for the purposes of programme improvement.
- iii. There should be community engagement activities that will enrichen candidates' experiences and foster their personal and professional development.
- iv. There should be collaborative participation with national and international HEPs and / or research centres (for example, through joint supervision, candidate exchange, joint degrees and split programmes).
- v. There should be provision of group supervision in order to manage and minimise risk.

2.3 Programme Structure

The supervision environment can only be effective if the programme structure is continually kept up-to-date with current developments in the field of study.

2.3.1 Basic Standards

- i. The programme must satisfy the following requirements:

Master's Degree by Research

- 1) For fulltime candidature, the minimum period is 1 year, whereas for part time candidature, the minimum period is 2 years.

- 2) Candidates must have followed a research methodology course.
- 3) The following requirements must be decided by the HEP:
 - a) Relevant prerequisite courses
 - b) Maximum period of candidature
 - c) Format of the dissertation

Doctoral Degree by Research

- 1) For fulltime candidature, the minimum period is 2 years, whereas for part time candidature, the minimum period is 3 years.
- 2) Candidates must have followed a research methodology course.
- 3) The following requirements must be decided by the HEP:
 - a) Relevant prerequisite courses
 - b) Maximum period of candidature
 - c) Format of the thesis

PhD by Published Work

The minimum duration of candidature is 6 months and must not exceed 2 years.

- 1) A supervisor must be appointed to:
 - a) Guide the candidate in choosing the published work for the submission
 - b) Guide the candidate in preparing a thesis coherent with the theme of specialisation
- 2) Thesis requirements:
 - a) Published work must encompass high impact factor journals, monographs, books, research-based chapters in books, high impact and high quality electronic publications, creative works, artifacts in the field.
 - b) The articles must be published within a period not exceeding 10 years from the date of submission.
 - c) For the 5 nominated publications, the candidate must be the principal author.
 - d) The thesis must contain:
 1. a list of scholarly published works;

2. acknowledgement of co-authors and verification of originality. Each published work must begin with a clear statement about the contribution made by each author in any joint published work;
 3. a summary of the major findings of each of the published works. It should explain how the work is integrated into one coherent intellectual framework, and how, when taken together, it contributes to knowledge in the relevant field; and
 4. an introductory chapter, literature review, research methodology (where applicable), discussion and conclusion which explains the significance of the contributions.
- ii. The programme must incorporate the appropriate research skills essential for understanding of the concepts, principles and methods that support the programme outcomes.
 - iii. The programme must be periodically reviewed to keep abreast of knowledge developments in the discipline, and with the needs of the society.
 - iv. The department must provide the technology and global networking for candidates to access real-time information and identify areas of importance.

2.3.2 Enhanced Standards

- i. The programme should fulfill the requirements of the discipline, taking into account the appropriate discipline standards and best practices.
- ii. HEPs should identify niche areas of research and research strengths.

2.4 Programme Management

2.4.1 Basic Standards

- i. Candidates must be provided with current written information about the aims, learning outcomes, and methods of assessment of the programme.
- ii. The programme must have an appropriate coordinator who has authority for planning, implementing, monitoring, evaluating and improving the programme through established procedures.

- iii. The programme must be regularly reviewed and evaluated in order to ensure attainment of MQF Level 7 for Master's and MQF Level 8 for Doctoral degrees. The review must involve an external assessor.
- iv. The department must provide candidates with a conducive learning environment in which a culture of research is nurtured.
- v. For the industrial doctoral programme, the learning environment must include the industry.
- vi. The HEP must have policies and procedures in place for candidates' grievances.

2.4.2 Enhanced Standards

- i. Innovations to improve supervision should be developed, supported, and evaluated.
- ii. The review and evaluation of the programme should involve stakeholders as well as national and international external expertise.

2.5 Linkages with External Stakeholders

2.5.1 Basic Standards

- i. The department must have linkages with external stakeholders for the purposes of programme planning, implementation and review.

2.5.2 Enhanced Standards

- i. The department should collect feedback from employers for programme improvement (for example, for candidates' placement, training and workplace exposure).
- ii. Candidates should be encouraged and supported to develop linkages with external stakeholders.

AREA 3: ASSESSMENT OF CANDIDATE LEARNING

Assessment of candidate is a crucial aspect of quality assurance because it drives candidate's learning. It is one of the most important measures to show the attainment of learning outcomes. The results of assessment are also the basis of the award of postgraduate degrees. Hence, the methods of assessment of candidate must be clear, consistent, effective, reliable, in line with current practices, and supportive of the attainment of the learning outcomes.

STANDARDS FOR AREA 3

3.1 Assessment and Learning

3.1.1 Basic Standards

- i. Assessment of candidate must be consistent with the levels defined in the MQF and in the 7 domains of learning outcomes.
- ii. Assessment principles, methods and practices must be aligned to the learning outcomes and programme content through 2 types of assessment, that is, formative and summative assessment.
- iii. Formative assessment must include:
 - 1) Monitoring of research progress periodically (for example, through a progress report, or a proposal defense).
This will assess candidate's knowledge, critical thinking, practical, technical, professional, scientific and problem solving skills.
 - 2) Research Presentation / Colloquium / Seminar / Workshop.
This will enhance candidate's communication skills, teamwork, leadership, organisational skills, lifelong learning and professionalism.
- iv. Summative assessment is used to assess all learning outcomes of a master's programme, and must include:
 - 1) completion of prescribed courses;
 - 2) dissertation; and
 - 3) viva voce (if required by HEP).

- v. Summative assessment is used to assess all learning outcomes of a doctoral programme, and must include:
 - 1) completion of prescribed courses;
 - 2) thesis; and
 - 3) viva voce.
- v. The department must monitor assessment of candidate to ensure candidate's satisfactory progress. This must be monitored through:
 - 1) regular consultation (formal and informal);
 - 2) proposal defense;
 - 3) presentation / colloquium / seminar / workshop; and
 - 4) research progress (using appropriate mechanisms).
- vi. The HEP must ensure that appropriate attitudes are inculcated, including adherence to research ethics.

3.1.2 Enhanced Standards

- i. The assessment and learning outcomes should be periodically reviewed to ensure their effectiveness.

3.2 Assessment Methods

3.2.1 Basic Standards

- i. The methods of assessment of candidate must be described, documented and communicated to the candidates (for example, information about their duration, diversity, weighting and coverage).
- ii. The processes and procedures must be documented and made accessible to supervisors and candidates.
- iii. A Dissertation / Thesis Examination Committee must be set up to ensure validity, reliability and fairness in the assessment of the dissertation / thesis.
- iv. Assessment procedures must be reviewed periodically, taking into consideration feedback from internal stakeholders.

3.2.2 Enhanced Standards

- i. The HEP should ensure that internal assessments are comparable to that of external best practices.
- ii. External expertise (national and international) should be consulted in the review and provide feedback on the assessment procedures.
- iii. Assessment procedures must be reviewed periodically, taking into consideration feedback from external stakeholders.
- iv. The HEP must have a mechanism to review and implement new methods of assessment.

3.3 Management of Candidate Assessment

3.3.1 Basic Standards

- i. The HEP is responsible for assessment policy, and the terms of reference must be described. There must be committees and processes for:
 - 1) verification and moderation of summative assessments; and
 - 2) benchmarking of the academic standards of assessment.
- ii. Supervisors must be given sufficient autonomy to supervise and manage the candidates' research progress and assessment.
- iii. There must be procedures available for candidates to bring issues or concerns to the attention of the relevant authorities.
- iv. The HEP must be responsible for the confidentiality and security of candidate assessment processes and academic records.
- v. The performance and results of summative and formative assessments must be made available to candidates through appropriate mechanisms.
- vi. The HEP must provide feedback to the candidates on their academic performance and ensure that they have sufficient time to undertake remedial measures. Necessary measures must be undertaken to provide feedback to candidates on performance, review and corrective measures.
- vii. The HEP must establish and document procedures on the criteria and selection of examiners.

- viii. The qualification requirements of an examiner must be clearly stated:
- 1) An examiner must have a minimum qualification of no less than the supervisor
 - 2) Where an examiner is without the required qualification, there must be sufficient experience in relevant field and the appointment is subjected to the approval of the HEP Senate.
- ix. Composition of dissertation / thesis examiners is as follows:

Master's Degree by Research

The master's dissertation must be examined by at least 2 examiners, 1 of whom is an external examiner.

Doctoral Degree by Research

For PhD, including PhD by published work, the thesis must be examined by at least 3 examiners, 2 of whom are external examiners.

- x. The department must advise the examiners to adhere to a stipulated time for the dissertation / thesis examination.
- xi. The HEP must provide a mechanism for candidates to appeal on the result of their dissertation / thesis examination / viva voce.

3.3.2 Enhanced Standards

- i. Internal and external stakeholders should be involved in reviewing the system of assessment of candidate.

AREA 4: CANDIDATE SELECTION AND SUPPORT SERVICES

In general, the admission policies of the programme need to comply with the prevailing policies of the Malaysian Ministry of Education (MOE). There are varying views on the best approach for candidate selection. Whatever the approach used, the HEP must be able to justify and defend its selection and maintain consistency in its implementation. The number of candidates to be admitted to the programme is generally determined by the capacity of the HEP and the number of qualified applicants. HEP admission and retention policies must not be compromised for the sole purpose of maintaining a desired enrolment. If an HEP operates across geographically-separated campuses or if the programme is collaborative in nature, the selection and assignment of all candidates must be consistent with national policies.

STANDARDS FOR AREA 4

4.1 Admission and Selection

4.1.1 Basic standards

Master's Degree by Research

- i. A bachelor's degree with minimum CGPA of 2.75 or equivalent, as accepted by the HEP Senate; or
- ii. A bachelor's degree or equivalent with minimum CGPA of 2.50 and not meeting CGPA of 2.75, can be accepted subject to rigorous internal assessment; or
- iii. A bachelor's degree or equivalent not meeting CGPA of 2.50, can be accepted subject to a minimum of 5 years working experience in relevant field.

Doctoral Degree by Research

- i. A master's degree accepted by the HEP Senate; or
- ii. Other qualifications equivalent to a master's degree that are accepted by the HEP Senate.

Note:

- i. There shall be no direct entry from bachelors degree level to doctoral degree level.
- ii. Candidates registered for master's degree programmes with at least CGPA 3.67 at bachelors degree level may apply to convert their candidacy to the doctoral degree programmes subjected to:
 - a) having shown competency and capability in conducting research at doctoral degree level
 - b) approval by the HEP Senate.

PhD by Published Work

The applicant must have publications that contribute to the scholarship of knowledge in the field and are acknowledged by academic peers. A formal application must be submitted to the Office of the Registrar and must include:

- i. minimum of 5 publications in alignment with the theme of the specialization;
- ii. an executive summary of the above publications to demonstrate the applicant's contribution to knowledge in the field; and
- iii. a list of scholarly published work.

A Selection Committee must be established to review the formal application of PhD by published work and recommend to the Senate the admission to candidature.

For international candidates, the language proficiency requirement must be determined by the HEP Senate.

4.2 Articulation Regulations, Credit Transfer and Credit Exemption

4.2.1 Basic Standards

Master's and Doctoral Degree

- i. Information on policies, regulations and processes of credit transfer, credit exemption and articulation practices must be documented in HEP policies and regulations for the programme.
- ii. The document must be made accessible to candidates and staff.

4.2.2 Enhanced Standards

Master's and Doctoral Degree

- i. The HEP should continually update the processes of articulation, credit transfer and credit exemptions, including national and international collaborative provision.

4.3 Candidate Transfer

4.3.1 Basic Standards

Master's Degree

- i. The HEP must clearly define and effectively disseminate policies, regulations and processes concerning:
 1. articulation practices for transfer of candidature from one mode to another (e.g. coursework to mixed mode);
 2. articulation practices for transfer of candidates from one programme to another; and
 3. articulation practices for transfer of candidature from one HEP to another.

4.4 Candidate Support Services and Co-Curricular Activities

4.4.1 Basic Standards

- i. The HEP must have an organisational structure that includes support services and co-curricular activities. The following support services are essential for candidate's wellbeing:
 - Health services
 - Recreation and sports facilities
 - Security
 - Counseling services
 - Internet service
 - Health insurance for international candidates
 - Documentation services

4.4.2 Enhanced Standards

- i. The HEP should provide support services for candidate's wellbeing such as:
 - Accommodation
 - Health insurance
 - Financial aid
 - Transportation
 - Child care centre
 - Places of worship

4.5 Candidate Representation and Participation

4.5.1 Basic Standards

- i. The HEP must clearly define and effectively disseminate policies, regulations and processes concerning candidate representation and participation.

4.5.2 Enhanced Standards

- i. Candidate activities should enhance soft skill attributes, such as management, leadership, and community engagement.

4.6 Alumni

4.6.1 Basic Standards

- i. The HEP must clearly define and effectively disseminate policies, regulations and processes concerning development and operation of the alumni.

4.6.2 Enhanced Standards

- i. The HEP should engage alumni in preparing candidates for their profession.
- ii. The HEP should engage alumni so that they can contribute to the development of the HEP.
- iii. The alumni should be involved in linking the HEP with the community.

AREA 5: ACADEMIC STAFF

The quality of academic staff is one of the most important components in assuring the quality of higher education. Every effort must be made to establish proper and effective recruitment, service, development and appraisal policies that are conducive to supporting and enhancing staff quality and productivity. Every programme must have appropriately qualified and a sufficient number of academic staff. It is important that the HEP provides a conducive work environment that encourages recruitment and retention of best talent.

An academic staff member is expected to be actively involved in research and consultancy, in addition to supervising or advising research candidates. Sufficient mechanisms should be put in place to provide training for academic staff in supervision skills and to ensure supervisors are exposed to best practices.

Workload and its equitable distribution is one of the ways that the HEP can acknowledge meritorious contribution for the purposes of promotion, salary determination or other incentives.

STANDARDS FOR AREA 5

5.1 Recruitment and Management

5.1.1 Basic Standards

- i. The HEP must have a policy and procedures for the recruitment of academic staff.
- ii. The terms and conditions of service must be clearly stated in the offer letter and reviewed periodically.
- iii. The HEP must establish a policy for the appointment of supervisors to ensure the quality and the sustainability of the programme.
- iv. The qualification requirements of a supervisor must be clearly stated:

Master's Degree by Research

- 1) A supervisor must have a minimum qualification of one level higher than the degree level enrolled in by the candidate i.e. a doctoral degree.
- 2) Where a supervisor is without the required qualification, a supervisor must have at least 5 years experience:
 - a) in teaching and research; or
 - b) as a co-supervisor.
- 3) The additional criteria are subjected to the approval of the HEP Senate.

Doctoral Degree by Research

- 1) A supervisor must have a minimum qualification of the equivalent degree level enrolled in by the candidate and at least 2 years experience:
 - a) in teaching and research; or
 - b) as a co-supervisor.
- 2) Where a supervisor is without the required qualification, extensive experience in research and supervision are additional criteria and are subjected to the approval of the HEP Senate.

- v. When there is only one supervisor, the supervisor must be a full-time staff of the conferring HEP.
- vi. When there is more than one supervisor, the principal supervisor must be a full-time staff of the conferring HEP.
- vii. For the industrial doctoral programme, in addition to academic supervisor(s), an industrial supervisor(s) must be appointed. The appointment of both supervisors must satisfy the HEP requirements.
- viii. The HEP must establish guidelines for supervisors including information about:
 - 1) delineating roles and responsibilities of supervisors;
 - 2) prescribing ethical principles for the purpose of assisting supervisors in the identification and resolution of ethical issues which may arise in the course of their research;
 - 3) ensuring supervisors conduct all activities with academic integrity and in compliance with the Code of Conduct, relevant laws, rules and regulations; and

4) ensuring an appropriate supervisor-to-candidate ratio for effective supervision.

- ix. The research skills, experience and specialisations of a supervisor must align with the research area of the candidate.
- x. The HEP must establish a mechanism for monitoring supervision process.
- xi. Recognition, reward and remuneration must be commensurate with appropriate workload distribution and meritorious supervision, based on transparent policies and procedures.

5.1.2 Enhanced Standards

- i. The HEP should establish a supervisory committee that guides the candidates in planning the research and preparing the dissertation / thesis.
- ii. The HEP should promote national and international linkages in enhancing the quality of supervision.

5.2 Service and Development

5.2.1 Basic Standards

- i. The HEP must encourage academic staff to engage in scholarly activities in order to attain national and international recognition.
- ii. The HEP must facilitate the provision of training in supervision skills for the supervisor.

5.2.2 Enhanced Standards

- i. The HEP should encourage participation in professional, academic and research communities at national or international level.
- ii. The HEP should encourage research activities beyond postgraduate research that will benefit the industry and the community.
- iii. The HEP should have in place a mentoring system for the enhancement of the quality of supervision.
- iv. The HEP should encourage industrial attachment.

AREA 6: RESEARCH RESOURCES

Appropriate research facilities must be included as part of educational resources. This is because a research-active environment improves the quality of higher education.

Adequate research resources are essential to support research activities. These include physical facilities, human capital, financial allocation, online resources and network and collaboration. Equally important, if not more so, is the quality, relevance, accessibility, availability and delivery of such resources and services, and their actual utilisation by candidates.

An excellent research culture attracts high calibre candidates and academics, and these foster critical thinking and enquiring minds, contributing to the advancement of knowledge.

Active researchers also attract grants that increase the scope of research undertaken by staff, again enhancing their knowledge and experience. Interdisciplinary research has positive effects on academic programmes.

A research-active environment thus provides opportunities for candidates to learn and participate in research. Exposure to an environment of curiosity and inquiry encourages candidates to develop lasting skills in problem-solving, data analysis and continuous updating of knowledge.

A balanced and proportional increase in direct and indirect educational resources supports research.

STANDARDS FOR AREA 6

6.1 Physical Facilities

The physical facilities of a programme are largely guided by the needs of the programme and specific field of research. These include appropriate space, equipment and support facilities for teaching and learning, research activities and administration.

6.1.1. Basic Standards

- i. The programme must have adequate and appropriate physical facilities to support research activities.
- ii. The physical facilities must comply with the relevant laws, and with those pertaining to health and safety regulations.
- iii. The HEP must have guidelines regarding the allocation of physical facilities.
- iv. The HEP must have a policy for effective use of information and communication technology (ICT) in the programme.
- v. The library or resource centre must have adequate space and up-to-date references.
- vi. Candidates must have access to relevant facilities within and outside the HEP when required.
- vii. For industrial doctoral programmes, research facilities must be made available.
- viii. The physical facilities must be continually maintained, improved or replaced.

6.1.2. Enhanced Standards

- i. Candidates should have the opportunity to be trained in the usage of relevant research facilities.
- ii. Physical facilities should include accredited laboratories based on national and international standards.

6.2 Research Expertise

Research expertise refers to staff who have been trained in their respective disciplines or with adequate knowledge and experience in the research areas, methodologies, and matters related to research activities. They advise and assist whenever there are problems and provide training in research processes and activities. Research expertise can be provided internally by the HEP or acquired from an external source.

6.2.1 Basic Standard

- i. The HEP must have policy or guidelines on the development and management of research expertise.

6.2.2 Enhanced Standard

- i. The HEP should acknowledge the contribution of the research expertise towards the programme.

6.3 Financial Allocation

Financial allocation refers to disbursement of funds for the management and sustainability of the programme.

6.3.1 Basic Standards

- i. The HEP must have clear lines of responsibility and authority for budgeting and resource allocation that takes into account the specific needs of the programme.
- ii. The HEP must have budgetary and procurement procedures to ensure that its resources are sufficient and that it is capable of utilising its finances efficiently.
- iii. The financial allocation must be adequate to support the programme.
- iv. The HEP must have a system for disbursement of research funds to support the programme.

6.3.2 Enhanced Standard

- i. Those responsible for the programme should be given sufficient autonomy to appropriately allocate resources to achieve the programme goals and to maintain high research standards.

6.4 Online Resources

Online resources refer to resources for self-access such as e-journals, e-books, patent databases and search engines to support research activities.

6.4.1. Basic Standards

- i. Online resources must be made available to support research activities.
- ii. Candidates must have access and be trained in the use of online resources.
- iii. The HEP must provide mechanisms for procuring, disseminating and monitoring the usage of online resources.

6.4.2. Enhanced Standard

- i. The HEP should facilitate collaboration to encourage knowledge sharing among national and / or international candidates.

6.5 Networks and Collaborations

Networks and collaborations refer to the participation in and sharing of intellectual knowledge, facilities and services among researchers and institutions at national and international levels.

6.5.1. Basic Standard

- i. The HEP must facilitate networking and collaboration among researchers and institutions at national and international levels.

6.5.2. Enhanced Standards

- i. The HEP should have a policy and future plan for networking and collaboration with national and international institutions.
- ii. The HEP should provide appropriate facilities and adequate financial allocation for networking and collaboration among researchers.

AREA 7: PROGRAMME MONITORING AND REVIEW

The HEP has a responsibility to ensure that the quality and standards of its research programmes are continually maintained and are subject to monitoring, evaluation and review.

Monitoring of research programmes provides a mechanism to improve the programme delivery, in order to meet the aims and objectives of the programme and the candidates' successful completion of the degree.

It is important to be able to identify issues or concerns that are relevant to the programme and to take appropriate actions to remedy these.

STANDARDS FOR AREA 7

7.1 Monitoring and Review

7.1.1 Basic Standards

- i. Each programme at the HEP must be monitored by the department, as authorised by the Senate.
- ii. The HEP must have a mechanism to manage and coordinate programmes so as to meet all requirements, especially with regard to quality assurance. The department, in turn, must monitor the running of the programmes in the interest of the stakeholders.
- iii. For monitoring and evaluation, the following data must be analysed to enhance the quality of the programme:
 - 1) Candidate performance
 - 2) Achievement of programme objectives
 - 3) Feedback from candidates
- iv. The HEP must continually monitor the overall performance of the programme, including, for example, completion rates and the ratio of candidates who graduate on time.
- v. Feedback from external assessors must be used to enhance the quality of the programme.

- vi. Research must be conducted independently and in compliance with a set of programme guidelines, ethics and code of conduct, including, for example, guidelines on plagiarism.
- vii. Any changes or new proposals for the procedures and processes for the research programme must be approved by the HEP.
- viii. The HEP must ensure the attainment of the learning outcomes as stated in Area 1 of this document.
- ix. The HEP must ensure the attainment of graduate attributes as listed in the Malaysian Qualifications Framework (MQF).
- x. The HEP must establish review committee(s) with defined terms of reference.
- xi. The HEP must review and analyse the overall attainment of the programme objectives.
- xii. For the industrial doctoral programme, there must be an MOU or a MOA existing between the HEP and the industry partner on intellectual property rights.

7.1.2 Enhanced Standards

- i. The HEP should monitor research output such as publications, copyright, prototypes, patents and commercialization.
- ii. Post-graduation performance should be monitored through longitudinal and / or tracer studies.

7.2 Stakeholder Involvement

7.2.1 Basic Standard

- i. Stakeholders must be consulted in the programme review process.

7.2.2 Enhanced standard

- i. The HEP should establish a Programme Advisory Panel, which may include representatives from professional bodies.

AREA 8: GOVERNANCE, LEADERSHIP AND ADMINISTRATION

At the departmental level, the leadership provides clear direction, builds relationships based on collegiality and transparency, manages finances and resources with accountability and fosters partnerships with stakeholders in educational delivery, research and consultancy.

STANDARDS FOR AREA 8

8.1 Governance

8.1.1 Basic Standards

- i. The HEP must clarify its governance structures and functions, the relationships with internal and external stakeholders, and their impact on the programme. These structures, functions and relationships must be documented and disseminated to all parties involved.
- ii. The HEP must state clearly its academic authority.
- iii. The HEP committees must be actively involved in policy development.
- iv. The HEP must establish mechanisms to ensure functional integration and comparability of research quality for programmes conducted in campuses that are geographically separated.
- v. The policies and practices of the department must be in tandem with the purpose of the HEP.

8.1.2 Enhanced Standards

- i. The HEP should have a comprehensive, interconnected and institutionalised committee system responsible for programmes, taking into consideration, among other points, internal and external consultation, feedback, current issues, networking and collaboration.
- ii. The governance principles should reflect the representation and participation of academic staff, candidates and other stakeholders.

8.2 Programme Leadership

8.2.1 Basic Standards

- i. The HEP must clearly state the criteria for the structure, appointment, roles and responsibilities of the leadership of the programme.
- ii. The leadership of the programme must be held by those with appropriate qualifications and research experience.
- iii. The HEP must establish processes for communication between departments and leaders in matters related to human resource management, graduate candidate management, allocation of research resources and decision making.

8.2.2 Enhanced Standard

- i. The HEP should ensure that the leadership takes on the responsibility of creating a research environment that generates innovation and creativity.

8.3 Programme Administration

8.3.1 Basic Standards

- i. The administrative staff of the department must be qualified, appropriate and adequate to support the implementation of the programme and related activities.
- ii. The procedures and related documents must be made available for the administration of the programme.
- iii. The department must conduct regular performance review of the programme's administration.

8.3.2 Enhanced Standard

- i. The HEP should have training schemes for the management of administrative staff for the specific needs of the programme, including, for example, risk management, maintenance of specialised equipment and technical skills.

8.4 Academic and Research Records

8.4.1 Basic Standards

- i. The departmental policies and practices concerning the nature and security of records related to the programme must be consistent with that of the HEP and fund provider and also comply with the relevant laws and regulations.
- ii. The department must implement policies that have been established by the HEP on the rights of individual privacy and the confidentiality of records.

8.4.2 Enhanced Standard

- i. The department should continually review policies on security and efficient retrieval of records, including increased use of electronic technology and its security systems.

AREA 9: CONTINUAL QUALITY IMPROVEMENT

The HEPs must ensure that the master's and doctoral degree graduates are world class researchers and knowledge workers with the capability to provide solutions to future problems and issues. Hence, HEPs are responsible for ensuring the quality of their postgraduate programmes. As such, HEPs must be continuously engaged in continual quality improvements of their postgraduate programmes, amidst a dynamic environment.

STANDARDS FOR AREA 9

9.1 Quality Improvement

9.1.1 Basic Standards

- i. The HEP must establish a policy for continual quality improvement.
- ii. The department must have a strategic plan in alignment with the HEP goals for the year and mechanisms to achieve the targets.
- iii. The department must engage staff for continual quality improvement.
- iv. The department must engage internal and external stakeholders in activities that can contribute towards the continual improvement of the programme.

9.1.2 Enhanced Standards

- i. The HEP should have a quality unit to facilitate the compliance of stated policies, processes and procedures.
- ii. The HEP should have a rewards-and-recognition system to promote a culture of quality.
- iii. The HEP should have periodical reviews for continual quality improvement of the programme.

**STANDARDS: MASTER'S AND
DOCTORAL DEGREE
BY COURSEWORK AND
MIXED MODE
(COURSEWORK AND
RESEARCH)**

AREA 1: VISION, MISSION, EDUCATIONAL GOALS AND LEARNING OUTCOMES

The vision, mission, educational goals and learning outcomes of the higher education provider (HEP) guide postgraduate programmes to produce graduates of excellence. The general goal is to develop broadly-trained graduates through the:

- development of knowledge, research and communication skills and competency based on the scientific / enquiry process and its outcomes;
- enhancement of generic skills such as attitudes, ethics, sense of professionalism and leadership skills for societal advancement within the framework of the national vision;
- utilisation of analytical and problem solving skills in order to evaluate and make decisions critically and creatively based on research evidence and / or experience;
- enhancement of the quest for knowledge and lifelong learning skills in line with the advancement of global development;
- research outcomes that are relevant to the national and international context; and
- dissemination of research outcomes through publications.

Postgraduate programmes are the building blocks that support the larger vision and mission of the HEP. Hence, these larger institutional goals must be considered in the design of postgraduate programmes.

The quality of the postgraduate programmes is ultimately determined by the capability of graduates to carry out their roles and responsibilities in national and international developments.

STANDARDS FOR AREA 1

1.1 Statement of Programme Aims, Objectives and Learning Outcomes

A programme's stated aims, objectives and learning outcomes guide what it wants the candidates to achieve. It is crucial for these aims, objectives and learning outcomes to be expressed explicitly and to be made known to the candidates as well as to the internal and external stakeholders.

1.1.1 Basic Standards

- i. The programme must define its aims, objectives and learning outcomes and identify its internal and external stakeholders.
- ii. The department must consult and discuss with relevant internal and external stakeholders when formulating programme aims and objectives.
- iii. The programme objectives must reflect the key elements of the outcomes of higher education that are in line with national and international practices.
- iv. The programme aims, objectives and learning outcomes must be consistent with and supportive of the HEP's vision and mission.
- v. The programme aims, objectives and learning outcomes must encompass provision for training or support to enable postgraduate candidates to acquire skills in problem identification, analytical problem solving and publication of research outcomes.
- vi. The aims, objectives and learning outcomes of the master's programme, must encompass research and research training skills in addressing problems of concern.
- vii. The aims, objectives and learning outcomes of the doctoral programme must encompass knowledge creation, novelty and innovation.

1.1.2 Enhanced Standards

- i. The internal and external stakeholders should include national and international peers.

- ii. The programme's aims, objectives and learning outcomes should be periodically reviewed in consultation with internal and external stakeholders, including international peers.

1.2. Learning Outcomes

The quality of the postgraduate programme is ultimately assessed by the capability of the candidates to carry out their roles and responsibilities in society. This requires the programme to have clear statements of the learning outcomes to be achieved. These statements should cumulatively reflect the seven MQF domains of learning outcomes: Knowledge of Discipline Areas; Practical Skills; Social Skills and Responsibilities; Values, Attitudes and Professionalism; Communication, Leadership and Team Skills; Problem Solving and Scientific Skills; and Information Management and Lifelong Learning Skills.

1.2.1 Basic Standards

- i. The scope of learning outcomes must reflect the competencies that the candidates should have upon completion of the programme:

Master's Degree

At the end of the programme, graduates must be able to:

- 1) demonstrate mastery of knowledge in the relevant field;
- 2) apply practical skills in the relevant field;
- 3) relate ideas to societal issues in the relevant field;
- 4) conduct research with minimal supervision and adhere to legal, ethical and professional codes of practice;
- 5) demonstrate leadership qualities through communicating and working effectively with peers and stakeholders;
- 6) generate solutions to problems using scientific and critical thinking skills;
and
- 7) manage information for lifelong learning.

Doctoral Degree

At the end of the programme, graduates must be able to:

- 1) synthesise knowledge and contribute to original research that broadens the frontier of knowledge in the relevant field;
 - 2) adapt practical skills leading to innovative ideas in the relevant field;
 - 3) provide expert advice to society in the relevant field;
 - 4) conduct research independently and adhere to legal, ethical and professional codes of practice;
 - 5) display leadership qualities through communicating and working effectively with peers and stakeholders;
 - 6) appraise problems in the relevant field critically using scientific skills; and
 - 7) integrate information for lifelong learning.
- ii. The programme must demonstrate how the defined research components contribute to the fulfillment of the programme's learning outcomes.
- iii. The attainment of the learning outcomes must be continuously assessed throughout the programme.

1.2.2 Enhanced Standards

- i. At the end of the programme, graduates should be able to publish in peer reviewed publications.
- ii. The programme should specify the link between research competencies expected on completion of studies and those required for career enhancement and future research.

AREA 2: PROGRAMME DESIGN AND DELIVERY

For the purpose of these standards in the accreditation of programmes offered by HEPs, the term “Programme” refers to an arrangement of course that are structured for a specified duration of time and volume of learning. This is required to attain the stated learning outcomes for the award of a master’s or doctoral degree by coursework or mixed mode.

STANDARDS FOR AREA 2

2.1 Academic Autonomy

An academic institution is expected to have sufficient autonomy over academic matters. Such autonomy should be reflected at the departmental level where the programme is being offered.

Recommended nomenclature of postgraduate degrees awarded is as shown in Table 1.

Table 1: Nomenclature of Postgraduate Degrees Awarded

Qualification	Mode		
	Research	Mixed Mode	Coursework
Master’s	MPhil	MPhil	Master’s degree according to field of specialisation
Doctorate	PhD or Professional Doctorate	PhD	Doctoral degree according to field of specialisation e.g. DBA, DEd, DEng
Post Doctorate	DSc, DEngSc	Not applicable	Not applicable

2.1.1 Basic Standards

- i. The department must have sufficient autonomy to design the programme structure and to allocate the resources necessary for its implementation, so as to ensure the attainment of the learning outcomes. Where applicable, the provision must also cover programmes conducted on campuses that are geographically separated.
- ii. The academic staff must be given sufficient autonomy to focus on areas of his / her expertise, such as academic supervision and teaching of candidates, research and writing, scholarly activities, academically-related administrative duties, and community engagement.
- iii. The HEP must have clearly-stated rules and regulations on conflict of interest, particularly in the areas of appointment of academic staff, supervisors and examiners, to ensure that candidates' best interests are addressed.
- iv. The HEP must have clearly-stated policies on intellectual property.

2.1.2 Enhanced Standards

- i. The HEP should have clearly-stated policies on conflict of interest, such as in the areas of private practice, part time employment and consultancy services.
- ii. The HEP should have a policy on academic autonomy for the department and the academic staff, reflecting the intellectual maturity of the HEP.
- iii. The HEP should have clearly-stated policies on indemnity insurance.

2.2 Programme Design, Learning-Teaching and Supervision

2.2.1 Basic Standards

- i. The department must have a defined process by which the programme structure is established, reviewed and evaluated with the involvement of the academic staff and stakeholders.
- ii. The programme must be considered after the resources and / or access to resources to support the programme have been identified.

- iii. The programme structure, learning-teaching and supervision must support the attainment of the programme learning outcomes.
- iv. There must be a variety of academic activities to attain the learning outcomes and to ensure that candidates take responsibility for their own learning.

2.2.2 Enhanced Standards

- i. The programme structure should encourage multi-disciplinary approaches through a variety of activities to enhance the personal and professional development of the candidate.
- ii. The needs analysis for the programme should involve feedback from external sources including stakeholders, whose comments should be considered for the purposes of programme improvement.
- iii. There should be community engagement activities that will enrichen candidates' experiences and foster their personal and professional development.
- iv. There should be collaborative participation with national and international HEPs and / or research centres (for example, through joint supervision, candidate exchange, joint degrees and split programmes).
- v. There should be provision of group supervision in order to manage and minimise risk.

2.3 Programme Structure

The learning and teaching environment can only be effective if the programme structure is continually kept up-to-date with current developments in the field of study.

2.3.1 Basic Standards

- i. The programme must satisfy the following requirements:

Master's Degree by Coursework, and Mixed Mode*

- 1) Minimum credit for master's degree by coursework, and mixed mode is 40 credits.

- 2) For fulltime candidature, the minimum period is 1 year, whereas for part time candidature, the minimum period is 2 years.
- 3) Coursework component must include a course in research methodology.
- 4) The following requirements must be decided by the HEP:
 - a) Maximum period of candidature
 - b) Format of the research project / dissertation

Master's Degree by Mixed Mode*

*Ratio of coursework to research is within the range of 50:50 or 40:60 or 30:70

Doctoral Degree by Coursework and PhD by Mixed Mode*

- 1) Minimum credit for doctoral degree by coursework and PhD by mixed mode is 80 credits.
- 2) For fulltime candidature, the minimum period is 2 years, whereas for part time candidature, the minimum period is 3 years.
- 3) Coursework component must include a course in research methodology.
- 4) The following requirements must be decided by the HEP:
 - a) Maximum period of candidature
 - b) Format of the research project / thesis

PhD by Mixed mode*

*Ratio of coursework to research is within the range of 50:50 or 40:60 or 30:70

- ii. The programme must incorporate the appropriate research skills essential for understanding of the concepts, principles and methods that support the programme outcomes.
- iii. The programme must be periodically reviewed to keep abreast of knowledge developments in the discipline, and with the needs of the society.
- iv. The department must provide the technology and global networking for candidates to access real-time information and identify areas of importance.

2.3.2 Enhanced Standards

- i. The programme should fulfill the requirements of the discipline, taking into account the appropriate discipline standards and best practices.
- ii. HEPs should identify new areas of research and research strengths.

2.4 Programme Management

2.4.1 Basic Standards

- i. Candidates must be provided with current written information about the aims, learning outcomes, and methods of assessment of the programme.
- ii. The programme must have an appropriate coordinator who has authority for planning, implementing, monitoring, evaluating and improving the programme through established procedures.
- iii. The programme must be regularly reviewed and evaluated in order to ensure attainment of MQF Level 7 for Master's and MQF Level 8 for Doctoral degrees. The review must involve an external assessor.
- iv. The department must provide candidates with a conducive learning environment in which a culture of scholarly learning is nurtured.
- v. The HEP must have policies and procedures in place for candidates' grievances.

2.4.2 Enhanced Standards

- i. Innovations to improve learning and teaching should be developed, supported, and evaluated.
- ii. The review and evaluation of the programme should involve stakeholders as well as national and international peers.

2.5 Linkages with External Stakeholders

2.5.1 Basic Standards

- i. The department must have linkages with external stakeholders for the purposes of programme planning, implementation and review.

2.5.2 Enhanced Standards

- i. The department should collect feedback from employers for programme improvement (for example, for candidate placement, training and workplace exposure).
- ii. Candidates should be encouraged and supported to develop linkages with external stakeholders.

AREA 3: ASSESSMENT OF CANDIDATE LEARNING

Assessment of candidate is a crucial aspect of quality assurance because it drives candidate's learning. It is one of the most important measures to show the attainment of learning outcomes. The results of assessment are also the basis of the award of postgraduate degrees. Hence, the methods of assessment of candidate must be clear, consistent, effective, reliable, in line with current practices, and supportive of the attainment of the learning outcomes.

STANDARDS FOR AREA 3

3.1 Assessment and Learning

3.1.1 Basic Standards

- i. Assessment of candidate must be consistent with the levels defined in the MQF and in the 7 domains of learning outcomes.
- ii. Assessment principles, methods and practices must be aligned to the learning outcomes and programme content through 2 types of assessment, that is, formative and summative assessment.
- iii. Formative and summative assessment must include:

Master's / Doctoral Degree by Coursework

- Written assessment
- Presentations
- Research project

Master's Degree by Mixed Mode

- Written assessment
- Presentations
- Dissertation

PhD by Mixed Mode

- Written assessment

- Presentations
 - Thesis
- iv. For mixed mode programme, the department must monitor candidate assessment to ensure candidates' satisfactory progress. This must be monitored through:
- 1) Regular consultation (formal and informal)
 - 2) Proposal defense
 - 3) Presentation / colloquium / seminar / workshop
 - 4) Research progress (using appropriate mechanisms)
- v. The HEP must ensure that appropriate attitudes are inculcated, including adherence to research ethics.

3.1.2 Enhanced Standards

- i. The link between assessment and learning outcomes should be periodically reviewed to ensure their effectiveness.

3.2 Assessment Methods

3.2.1 Basic Standards

- i. The methods of candidate assessment must be described, documented and communicated to the candidates (for example, information about their duration, diversity, weighting and coverage).
- ii. The processes and procedures must be documented and made accessible to staff and candidates.
- iii. A Dissertation / Thesis Examination Committee must be set up to ensure validity, reliability and fairness in the assessment of the dissertation / thesis.
- iv. Assessment procedures must be reviewed periodically, taking into consideration feedback from internal stakeholders.

3.2.2 Enhanced Standards

- i. The HEP should ensure that internal assessments are comparable to that of external best practices.
- ii. External peers (national and international) should be consulted in the review and provide feedback on the assessment procedures.
- iii. Assessment procedures must be reviewed periodically, taking into consideration feedback from external stakeholders.
- iv. The HEP must have a mechanism to review and implement new methods of assessment.

3.3 Management of Candidate Assessment

3.3.1 Basic Standards

- i. The HEP is responsible for assessment policy, and the terms of reference must be described. There must be committees and processes for:
 - 1) verification and moderation of summative assessments; and
 - 2) benchmarking of the academic standards of assessment.
- ii. Supervisors must be given sufficient autonomy to supervise and manage the candidates' research progress and assessment.
- iii. There must be procedures available for candidates to bring issues or concerns to the attention of the relevant authorities.
- iv. The HEP must be responsible for the confidentiality and security of candidate assessment processes and academic records.
- v. The performance and results of summative and formative assessments must be made available to candidates through appropriate mechanisms.
- vi. The HEP must provide feedback to the candidates on their academic performance and ensure that they have sufficient time to undertake remedial measures. Necessary measures must be undertaken to provide feedback to candidates on performance, review and corrective measures.
- vii. The HEP must establish and document procedures on the criteria and selection of examiners.

- viii. The qualification requirements of an examiner must be clearly stated:
- 1) An examiner must have a minimum qualification of no less than the supervisor
 - 2) Where an examiner is without the required qualification, there must be sufficient experience in relevant field and the appointment is subjected to the approval of the HEP Senate.
- ix. Composition of dissertation / thesis examiners is as follows:

Master's Degree by Mixed Mode

The dissertation must be examined by at least 2 examiners.

PhD by Mixed Mode

The thesis must be examined by at least 2 examiners, 1 of whom is an external examiner.

- x. The department must advise the examiners to adhere to a stipulated time for the dissertation / thesis examination.
- xi. The HEP must provide a mechanism for candidates to appeal on the result of their dissertation / thesis examination and / or viva voce.

3.3.2 Enhanced Standards

- i. Internal and external stakeholders should be involved in reviewing the system of candidate assessment.

AREA 4: CANDIDATE SELECTION AND SUPPORT SERVICES

In general, the admission policies of the programme need to comply with the prevailing policies of the Malaysian Ministry of Education (MOE). There are varying views on the best approach for candidate selection. Whatever the approach used, the HEP must be able to justify and defend its selection and maintain consistency in its implementation. The number of candidates to be admitted to the programme is generally determined by the capacity of the HEP and the number of qualified applicants. HEP admission and retention policies must not be compromised for the sole purpose of maintaining a desired enrolment. If an HEP operates across geographically-separated campuses or if the programme is collaborative in nature, the selection and assignment of all candidates must be consistent with national policies.

STANDARDS FOR AREA 4

4.1 Admission and Selection

4.1.1 Basic standards

Master's by Coursework

- i. A bachelor's degree with minimum CGPA of 2.50 or equivalent, as accepted by the HEP Senate; or
- ii. A bachelor's degree or equivalent not meeting CGPA of 2.50, can be accepted subject to a minimum of 5 years working experience in relevant field.

Master's by Mixed Mode

- i. A bachelor's degree with minimum CGPA of 2.75 or equivalent, as accepted by the HEP Senate; or
- ii. A bachelor's degree or equivalent with minimum CGPA of 2.50 and not meeting CGPA of 2.75, can be accepted subject to rigorous internal assessment; or

- iii. A bachelor's degree or equivalent not meeting CGPA of 2.50, can be accepted subject to a minimum of 5 years working experience in relevant field.

Doctoral Degree by Coursework, and PhD by Mixed Mode

- i. A master's degree accepted by the HEP Senate; or
- ii. Other qualifications equivalent to a master's degree that are accepted by the HEP Senate.

For international candidates, the language proficiency requirement must be determined by the HEP Senate.

4.2 Articulation Regulations, Credit Transfer and Credit Exemption

4.2.1 Basic Standards

Master's and Doctoral Degree

- i. Information on policies, regulations and processes of credit transfer, credit exemption and articulation practices must be documented in HEP policies and regulations for the programme.
- ii. The document must be made accessible to candidates and staff.

4.2.2 Enhanced Standards

Master's and Doctoral Degree

- i. The HEP should continually update the processes of articulation, credit transfer and credit exemptions, including national and international collaborative provision.

4.3 Candidate Transfer

4.3.1 Basic Standards

Master's Degree

- i. The HEP must clearly define and effectively disseminate policies, regulations and processes concerning:
 - 1) articulation practices for transfer of candidature from one mode to another (e.g. coursework to mixed mode).
 - 2) articulation practices for transfer of candidature from one programme to another.
 - 3) articulation practices for transfer of candidature from one HEP to another.

4.4 Candidate Support Services and Co-Curricular Activities

4.4.1 Basic Standards

- i. The HEP must have an organisational structure that includes support services and co-curricular activities. The following support services are essential for candidate wellbeing:
 - Health services
 - Recreation and sports facilities
 - Security
 - Counseling services
 - Internet service
 - Health insurance for international candidates
 - Documentation services

4.4.2 Enhanced Standards

- i. The HEP should provide support services for candidate wellbeing such as:
 - Accommodation
 - Health insurance
 - Financial aid
 - Transportation
 - Child care centre
 - Places of worship

4.5 Candidate Representation and Participation

4.5.1 Basic Standards

- i. The HEP must clearly define and effectively disseminate policies, regulations and processes concerning candidate representation and participation.

4.5.2 Enhanced Standards

- i. Candidate activities should enhance soft skill attributes, such as management, leadership, and community engagement.

4.6 Alumni

4.6.1 Basic Standards

- i. The HEP must clearly define and effectively disseminate policies, regulations and processes concerning development and operation of the alumni.

4.6.2 Enhanced Standards

- i. The HEP should engage alumni in preparing candidates for their profession.
- ii. The HEP should engage alumni so that they can contribute to the development of the HEP.
- iii. The alumni should be involved in linking the HEP with the community.

AREA 5: ACADEMIC STAFF

The quality of academic staff is one of the most important components in assuring the quality of higher education. Every effort must be made to establish proper and effective recruitment, service, development and appraisal policies that are conducive to supporting and enhancing staff quality and productivity. Every programme must have appropriately qualified and a sufficient number of academic staff. It is important that the HEP provides a conducive work environment that encourages recruitment and retention of best talent.

An academic staff member is expected to be actively involved in research and consultancy, in addition to teaching or advising candidates. Sufficient mechanisms should be put in place to provide training for academic staff in supervision and teaching skills and to ensure staff are exposed to best practices.

Workload and its equitable distribution is one of the ways that the HEP can acknowledge meritorious contribution for the purposes of promotion, salary determination or other incentives.

STANDARDS FOR AREA 5

5.1 Recruitment and Management

5.1.1 Basic Standards

- i. The HEP must have a policy and procedures for the recruitment of academic staff.
- ii. The terms and conditions of service must be clearly stated in the offer letter and reviewed periodically.
- iii. The HEP must establish a policy for the appointment of teaching staff and supervisors to ensure the quality and the sustainability of the programme.
- iv. The qualification requirements of a teaching staff and supervisor must be clearly stated:

Master's Degree by Coursework, and Mixed Mode

- 1) A teaching staff / supervisor must have a minimum qualification of one level higher than the degree level enrolled in by the candidate i.e. a doctoral degree.
- 2) Where a teaching staff / supervisor is without the required qualification, a teaching staff / supervisor must have at least 5 years experience:
 - a) in teaching and research; or
 - b) as a co-supervisor.
- 3) The additional criteria are subjected to the approval of the HEP Senate.

Doctoral Degree by Coursework and PhD by Mixed Mode

- 1) A teaching staff / supervisor must have a minimum qualification of the equivalent degree level enrolled in by the candidate and at least 2 years experience:
 - a) in teaching and research; or
 - b) as a co-supervisor.
 - 2) Where a teaching staff / supervisor is without the required qualification, extensive experience in research and supervision are additional criteria and are subjected to the approval of the HEP Senate.
- v. When there is only one supervisor, the supervisor must be a full-time staff of the conferring HEP.
 - vi. When there is more than one supervisor, the principal supervisor must be a full-time staff of the conferring HEP.
 - vii. The HEP must establish guidelines for teaching staff / supervisors including information about:
 - 1) delineating roles and responsibilities of supervisors;
 - 2) prescribing ethical principles for the purpose of assisting supervisors in the identification and resolution of ethical issues which may arise in the course of their research;
 - 3) ensuring teaching staff / supervisors conduct all activities with academic integrity and in compliance with the Code of Conduct, relevant laws, rules and regulations; and
 - 4) ensuring an appropriate teaching staff / supervisor-to-candidate ratio for effective teaching and supervision.

- viii. The research skills, experience and specialisations of a supervisor must align with the research area of the candidate.
- ix. The HEP must establish a mechanism for monitoring teaching and supervision processes.
- x. Recognition, reward and remuneration must be commensurate with appropriate workload distribution and meritorious teaching and supervision, based on transparent policies and procedures.

5.1.2 Enhanced Standards

- i. The HEP should establish a supervisory committee that guides the candidates in planning the research and preparing the dissertation / thesis.
- ii. The HEP should promote national and international linkages in enhancing the quality of learning and teaching.

5.2 Service and Development

5.2.1 Basic Standards

- i. The HEP must encourage academic staff to engage in scholarly activities in order to attain national and international recognition.
- ii. The HEP must facilitate the provision of training in teaching and supervision skills for the academic staff.

5.2.2 Enhanced Standards

- i. The HEP should encourage participation in professional, academic and research communities at national or international level.
- ii. The HEP should encourage research activities beyond postgraduate research that will benefit the industry and the community.
- iii. The HEP should have in place a mentoring system for the enhancement of the quality of teaching and supervision.
- iv. The HEP should encourage industrial attachment.

AREA 6: EDUCATIONAL RESOURCES

Appropriate teaching and research facilities must be included as part of educational resources. This is because a research-active environment improves the quality of higher education.

Adequate teaching and research resources are essential to support learning activities. These include physical facilities, human capital, financial allocation, online resources and network and collaboration. Equally important, if not more so, is the quality, relevance, accessibility, availability and delivery of such resources and services, and their actual utilisation by candidates.

An excellent learning and research culture attracts high calibre candidates and academics, and these foster critical thinking and enquiring minds, contributing to the advancement of knowledge.

Active researchers also attract grants that increase the scope of research undertaken by staff, again enhancing their knowledge and experience. Interdisciplinary research has positive effects on academic programmes.

A research-active environment thus provides opportunities for candidates to learn and participate in learning and research. Exposure to an environment of curiosity and inquiry encourages candidates to develop lasting skills in problem-solving, data analysis and continuous updating of knowledge.

A balanced and proportional increase in direct and indirect educational resources supports learning and research.

STANDARDS FOR AREA 6

6.1 Physical Facilities

The physical facilities of a programme are largely guided by the needs of the programme and specific field of research. These include appropriate space, equipment and support facilities for teaching and learning, research activities and administration.

6.1.1. Basic Standards

- i. The programme must have adequate and appropriate physical facilities to support learning and research activities.
- ii. The physical facilities must comply with the relevant laws, and with those pertaining to health and safety regulations.
- iii. The HEP must have guidelines regarding the allocation of physical facilities.
- iv. The HEP must have a policy for effective use of information and communication technology (ICT) in the programme.
- v. The library or resource centre must have adequate space and up-to-date references.
- vi. Candidates must have access to relevant facilities within and outside the HEP when required.
- vii. The physical facilities must be continually maintained, improved or replaced.

6.1.2. Enhanced Standards

- i. Candidates should have the opportunity to be trained in the usage of relevant learning and research facilities.
- ii. Physical facilities should include accredited laboratories based on national and international standards.

6.2 Teaching and Research Expertise

Teaching and research expertise refers to staff who have been trained in their respective disciplines or with adequate knowledge and experience in the research

areas, methodologies, and matters related to learning and research activities. They advise and assist whenever there are problems and provide training in learning and research processes and activities. Teaching and research expertise can be provided internally by the HEP or acquired from an external source.

6.2.1 Basic Standard

- i. The HEP must have policy or guidelines on the development and management of teaching and research expertise.

6.2.2 Enhanced Standard

- i. The HEP should acknowledge the contribution of the teaching and research expertise towards the programme.

6.3 Financial Allocation

Financial allocation refers to disbursement of funds for the management and sustainability of the programme.

6.3.1 Basic Standards

- i. The HEP must have clear lines of responsibility and authority for budgeting and resource allocation that takes into account the specific needs of the programme.
- ii. The HEP must have budgetary and procurement procedures to ensure that its resources are sufficient and that it is capable of utilising its finances efficiently.
- iii. The financial allocation must be adequate to support the programme.
- iv. The HEP must have a system for disbursement of teaching and research funds to support the programme.

6.3.2 Enhanced Standard

- i. Those responsible for the programme should be given sufficient autonomy to appropriately allocate resources to achieve the programme goals and to maintain high teaching and research standards.

6.4 Online Resources

Online resources refer to resources for self-access such as e-journals, e-books, patent databases and search engines to support learning and research activities.

6.4.1. Basic Standards

- i. Online resources must be made available to support learning and research activities.
- ii. Candidates must have access and be trained in the use of online resources.
- iii. The HEP must provide mechanisms for procuring, disseminating and monitoring the usage of online resources.

6.4.2. Enhanced Standard

- i. The HEP should facilitate collaboration to encourage knowledge sharing among national and / or international candidates.

6.5 Networks and Collaborations

Networks and collaborations refer to the participation in and sharing of intellectual knowledge, facilities and services among academic staff, researchers and institutions at national and international levels.

6.5.1. Basic Standard

- i. The HEP must facilitate networking and collaboration among academic staff, researchers and institutions at national and international levels.

6.5.2. Enhanced Standards

- i. The HEP should have a policy and future plan for networking and collaboration with national and international institutions.
- ii. The HEP should provide appropriate facilities and adequate financial allocation for networking and collaboration among academic staff and researchers.

AREA 7: PROGRAMME MONITORING AND REVIEW

The HEP has a responsibility to ensure that the quality and standards of its postgraduate programmes are continually maintained and are subject to monitoring, evaluation and review.

Monitoring of postgraduate programmes provides a mechanism to improve the programme delivery, in order to meet the aims and objectives of the programme and the candidates' successful completion of the degree.

It is important to be able to identify issues or concerns that are relevant to the programme and to take appropriate actions to remedy these.

STANDARDS FOR AREA 7

7.1 Monitoring and Review

7.1.1 Basic Standards

- i. Each programme at the HEP must be monitored by the department, as authorised by the Senate.
- ii. The HEP must have a mechanism to manage and coordinate programmes so as to meet all requirements, especially with regard to quality assurance. The department, in turn, must monitor the running of the programmes in the interest of the stakeholders.
- iii. For monitoring and evaluation, the following data must be analysed to enhance the quality of the programme:
 - 1) Candidate performance
 - 2) Achievement of programme objectives
 - 3) Feedback from candidates
- iv. The HEP must continually monitor the overall performance of the programme, including, for example, completion rates and the ratio of candidates who graduate on time.
- v. Feedback from external assessors must be used to enhance the quality of the programme.

- vi. Research must be conducted independently and in compliance with a set of programme guidelines, ethics and code of conduct, including, for example, guidelines on plagiarism.
- vii. Any changes or new proposals for the procedures and processes for the programme must be approved by the HEP.
- viii. The HEP must ensure the attainment of the learning outcomes as stated in Area 1 of this document.
- ix. The HEP must ensure the attainment of graduate attributes as listed in the Malaysian Qualifications Framework (MQF).
- x. The HEP must establish review committee(s) with defined terms of reference.
- xi. The HEP must review and analyse the overall attainment of the programme objectives.

7.1.2 Enhanced Standards

- i. The HEP should monitor research output such as publications, copyright, prototypes, patents and commercialisation.
- ii. Post-graduation performance should be monitored through longitudinal and / or tracer studies.

7.2 Stakeholder Involvement

7.2.1 Basic Standard

- i. Stakeholders must be consulted in the programme review process.

7.2.2 Enhanced standard

- i. The HEP should establish a Programme Advisory Panel, which may include representatives from professional bodies.

AREA 8: GOVERNANCE, LEADERSHIP AND ADMINISTRATION

At the departmental level, the leadership provides clear direction, builds relationships based on collegiality and transparency, manages finances and resources with accountability and fosters partnerships with stakeholders in educational delivery, research and consultancy.

STANDARDS FOR AREA 8

8.1 Governance

8.1.1 Basic Standards

- i. The HEP must clarify its governance structures and functions, the relationships with internal and external stakeholders, and their impact on the programme. These structures, functions and relationships must be documented and disseminated to all parties involved.
- ii. The HEP must state clearly its academic authority.
- iii. The HEP committees must be actively involved in policy development.
- iv. The HEP must establish mechanisms to ensure functional integration and comparability of teaching and research quality for programmes conducted in campuses that are geographically separated.
- v. The policies and practices of the department must be in tandem with the purpose of the HEP.

8.1.2 Enhanced Standards

- i. The HEP should have a comprehensive, interconnected and institutionalised committee system responsible for programmes, taking into consideration, among other points, internal and external consultation, feedback, current issues, networking and collaboration.
- ii. The governance principles should reflect the representation and participation of academic staff, candidates and other stakeholders.

8.2 Programme Leadership

8.2.1 Basic Standards

- i. The HEP must clearly state the criteria for the structure, appointment, roles and responsibilities of the leadership of the programme.
- ii. The leadership of the programme must be held by those with appropriate qualifications, teaching and research experience.
- iii. The HEP must establish processes for communication between departments and leaders in matters related to human resource management, graduate candidate management, allocation of learning and research resources and decision making.

8.2.2 Enhanced Standard

- i. The HEP should ensure that the leadership takes on the responsibility of creating a learning and research environment that generates innovation and creativity.

8.3 Programme Administration

8.3.1 Basic Standards

- i. The administrative staff of the department must be qualified, appropriate and adequate to support the implementation of the programme and related activities.
- ii. The procedures and related documents must be made available for the administration of the programme.
- iii. The department must conduct regular performance review of the programme's administration.

8.3.2 Enhanced Standard

- i. The HEP should have training schemes for the management of administrative staff for the specific needs of the programme, including, for example, risk management, maintenance of specialised equipment and technical skills.

8.4 Academic and Research Records

8.4.1 Basic Standards

- i. The departmental policies and practices concerning the nature and security of records related to the programme must be consistent with that of the HEP and fund provider and also comply with the relevant laws and regulations.
- ii. The department must implement policies that have been established by the HEP on the rights of individual privacy and the confidentiality of records.

8.4.2 Enhanced Standard

- i. The department should continually review policies on security and efficient retrieval of records, including increased use of electronic technology and its security systems.

AREA 9: CONTINUAL QUALITY IMPROVEMENT

The HEPs must ensure that the master's and doctoral degree graduates are world class knowledge workers and researchers with the capability to provide solutions to future problems and issues. Hence, HEPs are responsible for ensuring the quality of their postgraduate programmes. As such, HEPs must be continuously engaged in continual quality improvements of their postgraduate programmes, amidst a dynamic environment.

STANDARDS FOR AREA 9

9.1 Quality Improvement

9.1.1 Basic Standards

- i. The HEP must establish a policy for continual quality improvement.
- ii. The department must have a strategic plan in alignment with the HEP goals for the year and mechanisms to achieve the targets.
- iii. The department must engage staff for continual quality improvement.
- iv. The department must engage internal and external stakeholders in activities that can contribute towards the continual improvement of the programme.

9.1.2 Enhanced Standards

- i. The HEP should have a quality unit to facilitate the compliance of stated policies, processes and procedures.
- ii. The HEP should have a rewards-and-recognition system to promote a culture of quality.
- iii. The HEP should have periodical reviews for continual quality improvement of the programme.